

## Comments on Karn Report

EPA: None

State:

From: "Morrow, Greg (DNRE)" <MORROWG@michigan.gov>  
To: James Kohler/DC/USEPA/US@EPA, Stephen Hoffman/DC/USEPA/US@EPA  
Cc: "Bloemker, Jon (DNRE)" <BLOEMKERJ@michigan.gov>, "Lee, Lonnie (DNRE)" <LEEL@michigan.gov>  
Date: 02/25/2011 09:21 AM  
Subject: RE: Comment Request on Consumers Energy DE Karn, Weadock, and JR Whiting Draft Reports

Gentlemen,

Please accept the following comments related to the Draft Assessment Reports prepared for the EPA relative to the Consumers Energy DE Karn and JC Weadock coal ash disposal sites in Michigan.

Please note that MDNRE is not drawing any conclusions as to whether the GZA and Dewberry and Davis evaluations are acceptable, but rather providing additional information that may be pertinent and pointing out a few unclear or incorrect statements. The comments are primarily related to additional evaluations/reports (by Consumers and their consultants) which were not available during the GZA and Dewberry and Davis evaluations of the Karn and Weadock sites.

Draft Report Round 7 Dam Assessment Consumers Energy Company-D.E. Karn Plant, dated January 12, 2011, prepared by GZA GeoEnvironmental, Inc. (GZA report)

- In Section 1.2.7 and other areas of the report, GZA indicates that a failure of the perimeter dike is likely to only result in losses (economic and environmental) generally limited to the Owner's property. The rationale for making this assertion is unclear as the disposal Facility is in close proximity to waters of the State. This conclusion could be based on a detailed review of the critical slope stability scenarios with the lowest factors of safety, but this is not clear in the report. To simply state that a dike failure anywhere at the facility would likely only impact the owner's property does not seem prudent.
- The last paragraph of Section 1.3.5 in the GZA report discusses a conclusion from AECOMs analysis that the installation of a slurry wall around the disposal area is feasible. It should be noted that a subsequent evaluation completed by NTH Consultants, Ltd. (Updated Slope Stability Analysis, dated 9/29/10) seemed to question the feasibility of installing a slurry wall in areas where the key-in layer was very deep and/or areas which were found to have marginal

factors of safety for potential shallow failure surfaces under existing conditions.

- Section 1.3.7 of the GZA report discusses AECOMs recommendations for the site to institute a vegetation removal and management plan. It can be noted that an interim vegetation management plan was approved by the DNRE on 9/28/10 and a final plan (dated 12/30/10) is currently under review. The facility has already begun to remove vegetation on the dike and waste slopes.

- Section 2.6 of the GZA report discusses AECOMs recommendations to complete slope improvements on portions of the perimeter dike along both the intake and discharge channels. The subsequent evaluation/report by NTH also recommended slope improvements along the intake channel, but suggests that the calculated factors of safety for the slope along the discharge channel, which were below 1.5 for some scenarios, could be considered acceptable if a slope monitoring plan were put in place. The DNRE has not yet provided comments to the company regarding this conclusion.

Coal Combustion Waste Impoundment Round 7-Dam Assessment Report J.C. Weadock (Site 20), dated October 2010, prepared by Dewberry & Davis, LLC (Dewberry Report)

- In Section 2.2 of the report, Dewberry indicates that a failure of the perimeter dike is likely to only result in losses (economic and environmental) generally limited to the Owner's property. The rationale for making this assertion is unclear as the disposal Facility is in close proximity to waters of the State. This conclusion could be based on a detailed review of the critical slope stability scenarios with the lowest factors of safety, but this is not clear in the report. To simply state that a dike failure anywhere at the facility would likely only impact the owner's property does not seem prudent.

- In Section 4.1.2 of the Dewberry Report it discusses the slurry wall which was installed within the perimeter dike at the facility. It should be noted that the slurry wall does not completely enclose the disposal area. A section of the perimeter, upstream of the fish barrier and NPDES monitoring point, did not have a slurry wall installed in order to provide a vent for water from the site to discharge.

- In Section 7.0 of the Dewberry report, the structural stability evaluation references previous evaluations conducted by MTC and AECOM. It should be noted that the DNRE provided technical comments regarding the stability evaluations performed by AECOM. In response, Consumers retained SME to collect additional field data and perform an updated slope stability evaluation (Report on Dike Slope Stability Analyses, dated November 23, 2010). The SME report indicates a minimum factor of safety for dike slope stability of 1.4 for long-term conditions, which occurs along a dike interior to the landfill property (i.e. not adjacent to Waters of the State). SME believes that for this less critical dike, a factor of safety of 1.4 for the long term condition is acceptable. The DNRE is currently reviewing the SME report and will be providing technical comments in the near future.

- In Section 7.3 and other sections of the Dewberry report, it indicates that the stability of the dike appears to be satisfactory based, in part, on the fact that State of Michigan Dam Safety program staff completes regular inspections at the facility. This is not true. The DNRE conducts inspections relative to environmental permits/licenses for the site, but I don't believe that the Dam Safety Program is involved with this site due to the fact that it is a licensed type III landfill.
- In Section 8.3.2 of the Dewberry report, it indicates that Consumers and the State are discussing vegetation management issues related to the dike slopes. It can be noted that an interim vegetation management plan was approved by the DNRE on 9/28/10 and a final plan (dated 12/30/10) is currently under review.

Thank you for the opportunity to review these draft reports and provide comments. Please contact me if you have any questions regarding this correspondence.

Sincerely,

Greg Morrow, Environmental Engineer  
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Department of Natural Resources and Environment  
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Company: See attached letter dated March 23, 2011

March 23, 2011

Mr. Steve Hoffman  
U.S. Environmental Protection Agency  
Two Potomac Yard  
2733 South Crystal Drive  
5<sup>th</sup> Floor, N-5237  
Arlington, VA 22202-2733

**DRAFT REPORT, ROUND 7 DAM ASSESSMENT, CONSUMERS ENERGY COMPANY – D.E.  
KARN PLANT 1 & 2 SOLID WASTE DISPOSAL AREA, ESSEXVILLE, MICHIGAN**

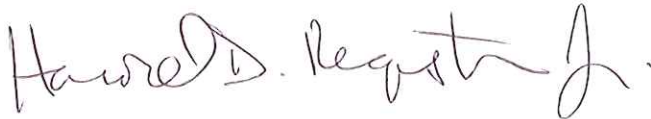
Dear Mr. Hoffman,

Thank you for the opportunity to allow Consumers Energy to comment on the Draft Report Round 7 Dam Assessment prepared by GZA GeoEnvironmental, Inc. We have appreciated the opportunity to work closely with staff and your contractor, GZA GeoEnvironmental, Inc. to produce the most accurate document based on the reports provided as part of this assessment.

Please find the detailed review comments provided as an attachment.

Please feel free to contact me with any questions you may have concerning the attached comments. I look forward to working with you and your contractors to finalize this work product.

Sincerely,



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Land and Water Management  
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Enclosures

cc (via email):

Mr. Jim Kohler, P.E. ([Kohler.James@epamail.epa.gov](mailto:Kohler.James@epamail.epa.gov))

# WRITTEN COMMENTS DRAFT REPORT, ROUND 7 DAM ASSESSMENT D.E. KARN 1 & 2

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## **1. Page i, Executive Summary**

This section states, “The Karn Disposal Area, in its current configuration, has a maximum height of approximately 17 feet above natural ground surface. Please revise to clarify that the 17-ft elevation refers to the perimeter dike and not the elevation of the landfill above grade.

## **2. Page ii, Operations & Maintenance Activities**

Comment No. 4 denotes, “Complete and/or analyze other embankment stability and seepage improvements recommended by AECOM.” Please revise to note that AECOM did not consider the seepage to be a structural or stability issue.

## **3. Page 4, Section 1.2.4 Description of the Karn Disposal Area and Appurtenances**

The minimum setback distance from the placement of conditioned, dry fly is 100-feet from the interior toe of the dike slope. Please revise to clarify that the 100-ft set back distance is from the Ordinary High Water Mark (OHWM) on the exterior facing slope to the point where placement of conditioned, dry fly ash is to be placed.

## **4. Page 5, Section 1.2.5 Operations and Maintenance**

This section states, in part, “An operation and maintenance checklist for daily field inspections has not been developed for the Karn Disposal Area.” Please revise that such a checklist is in place pursuant to Consumers LM-100 procedures but may not contain all of the elements as expected by the inspection team.

## **5. Page 5, Section 1.2.5 Operations and Maintenance**

Please revise to indicate that groundwater is monitored on a quarterly basis at a minimum of fifteen monitoring wells pursuant to the revised Hydrogeological Monitoring Plan (HMP) approved on March 1, 2010. Pursuant to the operating license, the HMP subsumes the requirements for the groundwater discharge authorization.

## **6. Page 6, Section 1.3.2, Karn Disposal Area**

# WRITTEN COMMENTS DRAFT REPORT, ROUND 7 DAM ASSESSMENT D.E. KARN 1 & 2

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The third paragraph, in part, states, "Fly ash was encountered intermittently in the fill soils of the perimeter dike." Please revise to clarify that this was true only along the intake channel segment of the perimeter dike.

## **7. Page 8, Section 1.3.5 Design and Construction Records and History**

The sixth paragraph indicates that the vertical expansion involved stacking and compacting dry, conditioned fly ash in Ponds A, B, and C with continued use Ponds D, E, and F for settling of precipitation runoff and bottom ash transport water. Please revise to clarify that the configuration of the vertical expansion was updated and approved by the Michigan Department of Environmental Quality in 2002 to address offset distances due to transmission towers and overhead lines.

## **8. Page 9, Section 1.3.5 Design and Construction Records and History**

The section states, in part, "As a result, CEC and DNRE mutually agreed that a slurry wall was needed around the Karn Disposal Area to contain chemical constituents in the leachate<sup>11</sup>." The footnoted reference from the DNRE letter dated August 26, 2009 failed to mention that at the time of the "mutual agreement" the state considered the facility to be out of compliance with the groundwater discharge standard. Consumers had no recourse but to agree with this element of the proposed consent agreement. Upon further review of all available data, the state had, in fact, erred, and its calculated discharge standard was an order of magnitude too low. When this error was discovered, the consent agreement was abandoned and the license issued (October 15, 2009). Consumers agreed voluntarily to study the feasibility of a slurry wall, but such a wall or other control will not be built or implemented unless groundwater performance criteria cannot be met. Please revise this statement to align with the agreement per the re-issued license of October 15, 2009.

## **9. Page 9, Section 1.3.6 Operating Records**

Please revise the statement, "Four survey monuments at the DEKP are surveyed annually to monitor settlement," to read that "An annual aerial survey is conducted for the DEKP ash disposal area contouring the surface at 1-ft intervals with individual survey points accurate up to +/- 0.1-ft."

## **10. Page 11, Section 2.2 Caretaker Interview**

Please revise to clarify that maintenance of the land disposal facility is the responsibility of CEC personnel rather than classifying the structure as a dam.

# WRITTEN COMMENTS DRAFT REPORT, ROUND 7 DAM ASSESSMENT D.E. KARN 1 & 2

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## **11. Page 12, Section 2.3 Operation and Maintenance Procedure**

Please revise to clarify that the condition of the dike is observed at least once per day by field technicians and field notes are recorded. There is a security check of the perimeter dike one per shift (three shifts per day) by security for more generalized observations.